

WHAT IS CLAIMED IS:

1. A method for facilitating a reduction in image artifacts, said method comprising:

receiving data regarding a scan of an object;

reconstructing a plurality of images using the received data to form a three-dimensional image space;

determining an orientation for a maximum intensity pixel operation;

locating the maximum intensity pixels within a plurality of ray paths in accordance with the determined orientation; and

filtering around each maximum intensity pixel along each ray path.

2. A method in accordance with Claim 1 wherein filtering around each maximum intensity pixel for each ray path comprises using a low pass filter.

3. A method in accordance with Claim 1 wherein filtering around each maximum intensity pixel for each ray path comprises using an adaptive filter.

4. A method for facilitating a reduction in image artifacts, said method comprising:

receiving data regarding a scan of an object;

reconstructing a plurality of images using the received data to form a three-dimensional image space;

determining an orientation for a maximum intensity pixel operation which is at an angle relative to a reconstructed image plane; and

locating the maximum intensity pixels along a plurality of ray paths in accordance with the determined orientation.

5. A method in accordance with Claim 4 further comprising filtering around each maximum intensity pixel.

6. A method in accordance with Claim 5 wherein filtering around each maximum intensity pixel for each ray path comprises using a low pass filter.

7. A method in accordance with Claim 5 wherein filtering around each MIP for each ray path comprises using an adaptive filter.

8. A method for facilitating a reduction in image artifacts, said method comprising:

receiving data regarding a scan of an object;

reconstructing a plurality of images using the received data to form a three-dimensional image space;

calculating an aspect ratio by taking a ratio of an intensity of two projections of the images; and

filtering based on the aspect ratio.

9. A method in accordance with Claim 8 wherein the two projections include a horizontal projection and a vertical projection and wherein calculating the horizontal projection comprises summing up the reconstructed images in the horizontal direction and wherein calculating the vertical projection comprises summing up the reconstructed images in the vertical direction.

10. A method in accordance with Claim 8 wherein said calculating an aspect ratio of the scanned object using the reconstructed images comprises calculating the ratio of the intensity of the horizontal projection over the vertical projection.

11. A method in accordance with Claim 10 wherein said calculating the ratio of the intensity of the horizontal projection over the vertical projection comprises locating and averaging a plurality of maximum projection samples.

12. A method in accordance with Claim 8 further comprising determining a scaling function using

$$s(t) = \begin{cases} 1, & t \geq t_h \\ \frac{t - t_l}{t_h - t_l}, & t_l \leq t < t_h \\ 0 & t < t_l \end{cases}$$

where:

t is the total mass in the reconstructed image calculated by at least one of a horizontal projection and a vertical projection; and

t_h and t_l are parameters.

13. A method in accordance with Claim 8 further comprises determining a smoothed image from the reconstructed image.

14. A method in accordance with Claim 8 further comprises determining a final image using

$$I'(x, y) = k \cdot r \cdot s(t) \cdot F(x, y) + [1 - k \cdot r \cdot s(t)]I(x, y)$$

where:

k is a scaling factor;

r is an aspect ratio;

$s(t)$ is the scaling function;

$F(x, y)$ is a smoothed image;

$I(x, y)$ is a reconstructed image; and

$I'(x, y)$ is a final image, the final image is the weighted sum of the original image with the filtered image.

15. An imaging system comprising:

a radiation source;

a radiation detector; and

a computer operationally coupled to said radiation source and said detector, said computer configured to:

receive data regarding a scan of an object;

reconstruct a plurality of images using the received data to form a three-dimensional image space;

calculate an aspect ratio by taking a ratio of an intensity of two projections of the images; and

filter based on the aspect ratio.

16. An imaging system in accordance with Claim 15 wherein the two projections include a horizontal projection and a vertical projection, wherein said computer configured to calculate the horizontal projection by summing up the reconstructed images in the horizontal direction and wherein said computer configured to calculate the vertical projection by summing up the reconstructed images in the vertical direction.

17. An imaging system in accordance with Claim 15 wherein to calculate an aspect ratio by taking a ratio of an intensity of two projections of the images said computer further configured to calculate the ratio of the intensity of the horizontal projection over the vertical projection.

18. An imaging system in accordance with Claim 15 wherein to calculate the ratio of the intensity of the horizontal projection over the vertical projection said computer further configured to locate and to average a plurality of maximum projection samples.

19. An imaging system in accordance with Claim 15 wherein said computer further configured to determine a scaling function using

$$s(t) = \begin{cases} 1, & t \geq t_h \\ \frac{t - t_l}{t_h - t_l}, & t_l \leq t < t_h \\ 0 & t < t_l \end{cases}$$

where:

t is the total mass in the reconstructed image calculated by at least one of a horizontal projection and a vertical projection; and

t_h and t_l are parameters.

20. An imaging system in accordance with Claim 15 wherein said computer further configured to determine a smoothed image from the reconstructed image.

21. An imaging system in accordance with Claim 15 wherein said computer further configured to determine a final image using

$$I'(x, y) = k \cdot r \cdot s(t) \cdot F(x, y) + [1 - k \cdot r \cdot s(t)]I(x, y)$$

where:

k is a scaling factor;

r is an aspect ratio;

$s(t)$ is a scaling function;

$F(x, y)$ is a smoothed image;

$I(x, y)$ is a reconstructed image; and

$I'(x, y)$ is a final image, wherein the final image is the weighted sum of the original image with the filtered image.

22. A computer readable medium encoded with a program configured to instruct a computer to:

receive data regarding a scan of an object;

reconstruct a plurality of images using the received data to form a three-dimensional image space;

calculate an aspect ratio by taking a ratio of an intensity of two projections of the images; and

filter based on the aspect ratio.

23. An computer readable medium in accordance with Claim 22 wherein the two projections include a horizontal projection and a vertical projection, wherein said program configured to calculate the horizontal projection by summing up the reconstructed images in the horizontal direction, and wherein said program configured to calculate the vertical projection by summing up the reconstructed images in the vertical direction.

24. A computer readable medium in accordance with Claim 22 wherein to calculate an aspect ratio by taking a ratio of an intensity of two projections of the images said program further configured to calculate the ratio of the intensity of the horizontal projection over the vertical projection.

25. A computer readable medium in accordance with Claim 22 wherein to calculate the ratio of the intensity of the horizontal projection over the vertical projection said program further configured to locate and to average a plurality of maximum projection samples.

26. A computer readable medium in accordance with Claim 22 wherein said program further configured to determine a scaling function using

$$s(t) = \begin{cases} 1, & t \geq t_h \\ \frac{t - t_l}{t_h - t_l}, & t_l \leq t < t_h \\ 0 & t < t_l \end{cases}$$

where:

t is the total mass in the reconstructed image calculated by at least one of the horizontal projection and the vertical projection; and

t_h and t_l are parameters.

27. A computer readable medium in accordance with Claim 22 wherein said program further configured to determine a smoothed image from the reconstructed image.

28. A computer readable medium in accordance with Claim 22 wherein said program further configured to determine a final image using

$$I'(x, y) = k \cdot r \cdot s(t) \cdot F(x, y) + [1 - k \cdot r \cdot s(t)]I(x, y)$$

where:

k is a scaling factor;

r is an aspect ratio;

$s(t)$ is the scaling function;

$F(x, y)$ is a smoothed image;

$I(x, y)$ is a reconstructed image; and

$I'(x, y)$ is a final image, the final image is the weighted sum of the original image with the filtered image.